

Comments by Bruce Herbold
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South Delta Fish Protection
a Strawman Proposal

Rather than pursuing the action-by-action approach of the request for comments, I offer the following opinions in terms of a fish-by-fish view of the best way to minimize the impacts of the export operations and the areas where we are most in need of improving our understanding. These opinions are purely an effort to get the discussion rolling next Monday, they come from one of the few involved SDFP participants with no legal or financial link to the proposed projects and do not represent any agency or group, least of all the USEPA.

Winter-run salmon, spring-run yearling outmigrants, and (and Steelhead?) –
Close the DCC from Nov 1 onwards as much as possible while still protecting delta water quality and water project operations. Results to date suggest that half or less of the full DCC flow is necessary to achieve full WQ benefits. Well-designed studies to definitively answer this question wait only upon arranging two weeks of experimental pumping regimes under low-flow conditions. Simultaneously with DCC closures, efforts must be made to focus habitat restoration to benefit salmonids in the northern and western delta.

San Joaquin fall-run salmon –
Continue and augment the VAMP studies by finding opportunities to maximize the occurrence of 7000 cfs flow conditions, which have not yet occurred in the 4 years of the study. The 7000 cfs flow conditions are the only times where impacts of different export levels can be directly compared. Construction of a Head of Old River Barrier is called for in the Napa agreement and elsewhere and should be facilitated in order to allow closure of the head of Old River at the first indication of wild fish outmigration and remain closed until river temperatures exceed 18C. Ensure a window of sharply reduced exports simultaneously with fall HORB placement to facilitate adult upmigration.

Sacramento fall and late-fall run salmon –
With the mandated closure of the DCC from Feb-May 20, the remaining largest need of fall run salmon may be for successful outmigration from the delta for fry that have raised there. Improved screening, transport and reduced predation in CCF and at the release sites for small salmonids are probably essential and should be one of the focuses of studies at the test fish facilities. Equally important is an understanding of the conditions that put these fish at risk: do high flows reduce the impacts of the pumps? How big is the zone of influence of the pumps under the 35% E:I ratio restriction at low flows? Are there operational methods, similar to tidal/nocturnal closures of the DCC, that could significantly reduce the entrainment of south delta fish into CCF? These questions should be one focus of the new South Delta studies.

Delta smelt –
In the last three years as the EWA has limited exports during the two weeks following VAMP, we have not had the occasions of high 'take' that characterized many earlier years. Many

uncertainties surround our ability to protect young smelt through the salvage operations and I am hopeful that the CHTR studies will address many important issues. However, the most effective tool for the protection of young smelt is to give them as great a chance as possible to survive until tidal hydrodynamics can disperse them broadly enough that a large part of several cohorts can encounter the low salinity zone. Understanding the mechanisms of dispersion of smelt larvae and the role of limited exports in facilitating that dispersion should be a high priority of the South Delta Studies. VAMP-level export limits until delta water temperature exceeds 24 C (usually early June) is probably the single best thing we can do to reduce the impacts of south delta export operations on young smelt.

Striped bass and American shad –

These important sport fisheries stand at the greatest risk of impacts from many of the proposed changes in delta plumbing and operations that mostly tend toward greater export volumes during summer months. Whereas young fall run salmon benefit from the seasonal high flows and the regulatory limitation on project springtime operations, these species are principally salvaged when the zone of influence of the exports is greatest. They also stand the greatest risk of being entrained repeatedly, since a part of the population resides in the delta. Predation impacts on these species is likely high due to the higher foraging activities of predators at higher temperatures. Effective protection of these species will likely rely upon results of TFTF or TDFE studies, incidental information from CHTR studies, predation studies in CCF and at the release sites and upon a better understanding of the near-field impacts of project operations aspects of the south delta studies.

Green and white sturgeon –

The largest number of green sturgeon in the Central Valley was found in CCF. We lack any understanding of the needs of this species in regard to export operations, but there is a potential problem of CCF acting as a large fish trap for them. Radio-tagging studies of these fish might fit in well with radio-tagging studies done on salmon in the south delta and could be a valuable addition to south delta studies.